


Please insert the following "ABSTRACT" after the last page of the claims:

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The present invention relates to the isolation, purification, characterization and use of the plant diacylglycerol acyltransferase, DGAT, gene and associated gene products. The invention includes isolated and purified DGAT cDNA (SEQ ID NO: 1) and a plant diacylglycerol acyltransferase gene (SEQ ID NO: 3) and homologues thereof from the Brassicaceae, such as *Arabidopsis thaliana*. Methods of using the DGAT DNA to regulate seed oil content, the ratio of diacylglycerol/triacylglycerol proportions in the seed oil, fatty acid synthesis, seed oil acyl composition, seed size/weight and carbon flux into other seed components are also included. Methods of producing transgenic plants, plant tissues and plant seeds having genomes including DGAT genes, and the resultant transgenic plants, plant tissues and plant seeds are also included.